



# THE NEED AND DEMAND FOR GREEN SKILLS TO ACHIEVE INCLUSIVE GREEN GROWTH: AN ANALYSIS

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## ABSTRACT

There is a close correlation between sustainable development and the knowledge economy. Technical skills, knowledge, values and attitudes are the essential ingredients needed for workforce in a knowledge economy to develop and support sustainable social, economic and environmental outcomes in business, industry and the community are the required skills and for achieving inclusive green growth. In a green economy, skills for sustainability comprises the critical importance of education, training and skills development in creating an innovation culture and building capabilities to drive green growth, sustainable development and a just transition to a low carbon economy.

It is argued that future economic growth with decent work and rising living standards would critically rest on the ability of the present generation to manage and restore the natural assets on which all life and economic activities depend. This process of future economic growth characterised by rising performance of services in global trade inevitably exerts a heavy pressure on skill development systems. Focussing on this necessity, the present paper analyses the demand for future skills in the context of progress towards green growth which should be sustainable and inclusive. It is also argued that green growth strategy also impact the efforts to eradicate poverty particularly in rural areas. Explaining the main drivers of demand for skills required to achieve “inclusive green growth”, this paper assesses the status of skill development around the globe, and with special reference to India. An attempt is also made in this paper to deal with the measures to be taken in India to transform its “demographic surplus” in to a “demographic dividend”.

**KEYWORDS:** Green Growth, Green Jobs, Green Skills, Inclusive Growth, Low Carbon Economy, Demographic Dividend.

In these days of globalisation, every economy has been driven by “Knowledge”. The concept of knowledge driven economy refers to “a set of new services of competitive advantage which can apply to all sectors, all companies and regions, from agriculture and retailing to software and biotechnology”. (Charles Lead beater, 1999). the economists argue that in a knowledge economy economic success is increasingly based upon the effective utilisation of intangible assets such as knowledge, skill and innovative potential as the key resources for competitive advantage (ESRC, 2005) and the role of knowledge compared with natural resources, physical capital and low skill labour is of greater importance. Generally the emergence of knowledge economy demands and depends up on “up skilling” of workforce, since white collar and high skilled jobs drive the employment growth in a knowledge economy. Employment opportunities in a knowledge economy assume the characteristics of “more skilled” across industries and within individual occupations, which are to be obtained beyond general education for meeting the requirements of “work place-competencies”. The experiences of knowledge based economies exhibit that employment is being driven by high-skilled jobs (ILO, 2000, OECD, 1998). Hence, in recent years appropriate policies and practices for skill development have been occupying a dominant place in majority of the developing economies. The countries which are moving towards “skilling” their workforce strongly believe that more cost advantages are no longer sufficient, rather they are arguing that industries should have a holistic approach considering economic, social, environmental and financial aspects. Recently, the corporate institutions are linking the “goal framing theory” to their environmental behaviour (Oikonomou et. al. 2009) since the companies have some set goals to achieve within its contemporary business environment that is constantly being dictated by adherence to emerging environmental and social issues (Zsoka, 2008) and to achieve their profit goal, they are striving to maintain a sound corporate image and becoming more receptive to environmental policies and environmental consciousness (Jahdi, 2007). Keeping these shifts in the development strategies, today many international financing agencies and institutions are working with Governments to help them simultaneously to achieve several interrelated objectives like inclusive economic growth, green growth and inclusive green growth. In this context, the Governments have also identified “skill development for employability” as a priority area for promoting sustainable economic growth and inclusive green growth.

### What is Green Growth?

In recent years, it has been recognised that economic growth cannot be sustained without dramatic increase in natural resource productivity and reduction in carbon emissions. As a result of the clear evidence of negative climatic change impacts today and the potentially devastating impact in the future, green growth has become a pre-condition for a stable, vibrant and inclusive global economy. Though there is no universally agreed definition for “green growth”, it can be defined as “fostering economic growth and development, while ensuring that natural assets continue to provide resources and environmental services, on which our well-being relies”. It is argued that economic growth should result into efficient use of natural resources, minimisation of pollution and adverse environmental impacts and this growth should be “inclusive” in nature, which

acknowledges three pillars—economic, social and environmental – of sustainable development.

To sum up, green growth is economic progress that fosters environmentally sustainable, low carbon and socially inclusive development and it is a pattern of development that decouples economic growth from carbon emissions, pollution and resources use and promotes growth through the creation of new environment-friendly products, industries and business models that also improve people's quality of life.

The OECD (2014) has designed the following six indicators for communicating the progress towards green growth:

1. Carbon Productivity
2. Material Productivity
3. Environmentally Adjusted Multifactor Productivity
4. Natural Resource Index
5. Changes in Land Use and Cover
6. Population Exposure to Air Pollution

A central element of green growth is the environmental and resource efficiency of production and consumption, and how this changes with time, place and across sectors. Understanding these trends, together with the underlying factors, is an essential part of monitoring the transition to green growth. Progress toward green growth can be monitored by relating the use of environmental services in production to the output generated. Environmental services include natural resources and materials, including energy, and pollutants and other residuals with their implied use of environmental services like the atmosphere. Tracking trends in decoupling of inputs to production from economic and sectoral growth is an important focus for monitoring.

### What are Green Jobs?

Green growth strategy, as it is proved, changes the structure of the economy- both developed and developing – as it becomes a “weightless economy” in which a much higher proportion of economic activities are dependent on the generation of new ideas and a much lower fraction on the throughput of physical resources. (Alex Brown, 2012, World Bank, 2012). Specifically, but not exclusively, “green Jobs” are those jobs that help to protect ecosystems and biodiversity; reduce energy, materials, and water consumption through high efficiency strategies; decarbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution” (UNEP, 2008). Green Jobs can also be defined as “work in agricultural, manufacturing, research and development (R&D), administrative, and service activities that contribute substantially to preserving or restoring environmental quality”. The European Commission's Environment Directorate defined green jobs particularly for industrial sector as “activities which produce goods and services to measure, prevent, limit, minimise or correct environmental damage to water, air and soil as well as problems related to waste, noise and ecosystems.” However, it should be kept in mind that effectively a job may be asso-

ciated with an economic activity that is more environmentally sustainable, but it cannot be considered a “green job”. A green job has to meet the conditions of decent work also. A green job must respect the human rights at work, should be productive and remunerative, must provide broad social protection and should facilitate the maintenance of relations with social partners. Particularly for urban areas and cities which are growing at an unprecedented rate, the concept of green growth assumes much importance and need low carbon actions and economic activities. This strategy with green ideas and actions change the structure of economies across all sectors associated with a parallel impact of Information and Communication Technology and brings both quantitative and qualitative changes in output and employment. The low-carbon dependent output generates green jobs in the economy that aim at and invest in green growth sectors and activities.

The definitions and explanations given for “green jobs” deliberately tell us that the employment generated by using technologies, products and services that reduce environmental risk and minimises pollution and resources could be considered as “green jobs”.

#### Demand for Skills to Generate Green Jobs:

In recent years, being driven by these green growth and green jobs strategies, the climate change adoption and mitigation policies have increasingly become the drivers of change for societies, economies, enterprises and workers to shift to a low carbon economy. It is a known fact that “low-carbon economy” refers to an economy based on low carbon power sources that has a minimal output of greenhouse gas emissions into the biosphere, particularly the emissions of carbon dioxide. These efforts towards achieving a low-carbon economy necessarily impact the labour market and skill development policies due to mix of goods and services produced and consumed, shifts away from activities with large environmental foot-print and greener technologies are developed and applied throughout the economy. Hence, progress towards inclusive green growth requires generation of green jobs with required quality of skills of the workforce with environmental responsibility.

#### Skills Necessary for a Green Economy:

As commented by OECD (2012) skills have become the global currency of the 21st Century. Without proper skills any economy cannot achieve green growth and can generate green jobs, which accelerates the process of inclusive growth.

“Skill” has many meanings and synonyms like ability, competence, aptitude and talent. When economists, sociologists, technocrats and psychologists talk about “skill”, they often appear to be talking about different things. Particularly when skills are used in the discussions of social and economic actions in the present century, it can be defined as “a personal quality” which has the following Three basic features and this concept was called as “PES” concept as detailed in fig.1

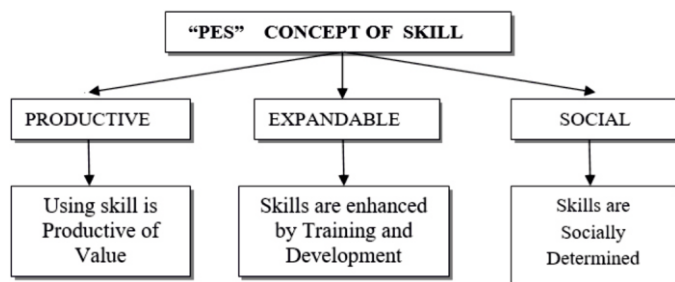


Fig. 1: “PES” concept of skill

Source: OECD (2012) What is Skill? An Inter-disciplinary Synthesis.

In neo-classical economics, skill is one of the main ingredients of human capital. Education and training are investments in the accumulation of skills. Experts argue that the acquisition, valuation and utilisation of skill are each socially determined processes. This implies that the acquisition of skills is conditioned by attitudes and expectations that are imprinted with social norms, while opportunities for skill acquisition are circumscribed by social class. The use of skills in organisations is affected by the quality of employment relations and by management strategy that is culturally determined. (Green, 2011).

In a green economy, the transition and structural changes need specific challenges, specific industries and specific skills and green-specific policies for skill development. An assessment of skills required in a green economy must at:

1. Impact of green economy on labour market for which a complete and integrated analysis of how green growth changes the demand for labour and the requirement of job-skills.
2. A better coordination is necessary between labour market and skill policies with other green growth policies such as environmental and eco-innovation policies.
3. The labour market and skill policies are to be incorporated into broader sec-

toral policies such as initiatives to develop new green sectors or to help existing sectors to be environmentally sustainable. For example: promotion of energy-efficient construction.

4. The greening of existing jobs certainly affects a greater no. of workers, particularly in labour-intensive sectors like construction and agriculture. Hence, these displaced workers are to be provided with retaining opportunities so that they might be absorbed in the changing production methods, for which a continuous vocational training is necessary for acquiring new green skills.
5. The promotion of high quality jobs in this transition and structural change, much attention is to be paid towards right of the workers as the green jobs generated are formal jobs and necessarily need an extreme social dialogue and minimum job standards.

#### The Six Drivers:

According to a “foresight” exercise, there are Six drivers of change that impact the demand for skills in a green economy as shown in fig. 2

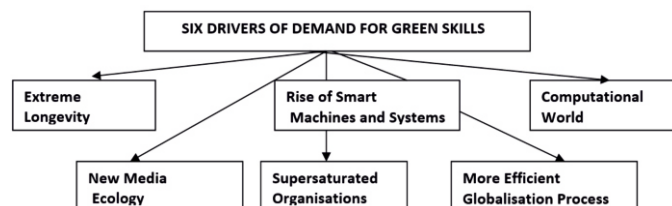


Fig. 2: Six Drivers of Demand for Green skills

Source: Institute for the Future (2011) Report on Future Work Skills-2020

The demand for skills required in a greener economy can be summarised in the following way:

Drivers	Priority Areas/sectors	Requirement of skills for
1	Extreme Longevity	The Needs and requirements of an aging population and to the movement of people towards healthier life styles and holistic approaches to what they eat, how they work and where they live, and much of their daily life from the lens of Health.
2	Rise of Smart Machines and Systems	Humans and their relationship with Machines, which enter into production process, teaching, combat, machine security and virtually every domain of human lives. A new generation of automated systems those replaces humans and augment the human skills and abilities. (ROBOS)
3	Computational World	Era of “everything is programmable”. Interaction with Data, See Patterns in Data, Make Data-based Decisions and use Data to design for desired outcomes.
4	New Media Ecology	Sophisticated skills for new multimedia technologies that take shape around the multimedia technologies. Development of new languages for Communication.
5	Superstructured Organisations	Replacement of Traditional/Organisational theories by the fields such as game design, neuroscience and happiness psychology. These fields demand a new set of tools and training methodologies and shape the kinds of social, economic and political organisations that people inhabit. Social technologies drive new forms of production and value creation.
6	More efficient Process of Globalisation	Move towards greater exchanges and integration across geographic boundaries. Job creation, innovation and political power would not be a monopoly of developed countries. The resource and infrastructure constrained developing countries would dominate in highly globally connected world.

#### Where are the Indians in Skill Development?

No doubt, the economic progress towards greening the economy demands highly skilled manpower. However, in the present world employees state a variety of reasons for their inability to fill the jobs. They argue that undesirable geographic locations, candidates demand for more pay than the what employers had offered etc., constrain them to select the skilled employees. 81.0 per cent of the employers in Japan, 71.0 per cent in Brazil, 49.0 per cent in United States and 48.0 per

cent in India have reported the difficulty in filling jobs due to a variety of reasons (EY and FICCI, 2012). The data on percentage of workforce receiving skill training shows that 96.0 per cent and 80.0 per cent of the workforce in Korea and Japan received skills training, whereas this proportion was negligible at 10.0 per cent in India. According to NSSO Report (2014) on Employment and Unemployment Situation in India, 0.8 per cent of the workers in rural areas and 2.5 per cent of the workers in urban areas only had diploma/certificate as their educational qualifications and 42.0 per cent of the workers in rural areas and 19.6 per cent of the workers in urban areas were found illiterate. (Refer Appendix-1). As a result, the “Knowledge Economy Index” for India was estimated at 3.06 in 2012 on the 10-point index, whereas Sweden (9.43), Finland (9.33), United States (8.77), China (4.37) and Sri Lanka (3.63) had high and better scores (Knoema: World Data Atlas -2012). The World Economic Forum indicated that only 25.0 per cent of the total Indian professionals were considered employable by the organised sector and the remaining 75.0 per cent of the professional were not supported by any structured skill development and training system of acquiring or upgrading skills.

### Conclusion:

No doubt, Skills are central to improve employability and livelihood opportunities, reduce poverty, enhance productivity, and promote environmentally sustainable development. Coordinated efforts are needed to develop an integrated approach that improves access to relevant, good quality education and training to all women and men. Of course, in recent years the Government of India has been implementing the strategy of “Kausal Bharat-Kushal Bharat” and initiating a variety of innovative steps to improve the “employability skills” of the both rural and urban people, particularly youth, for acquiring the skills necessary for ushering into the greener economy. Many efforts are being made to transform the Indian “demographic surplus” into “demographic dividend”. Of late the India Skills Report-2014 has released the survey results organised to identify the levels of skills available across India measured by “employability skills” with reference to communication skills, computer skills and numerical and logical ability skills. The survey revealed that Rajasthan, Punjab and Tamilnadu occupied the top three rankings and Andhra Pradesh did not occupy the place among 8 top states. Let us hope that 213 million people in agricultural sector, 117million in industrial sector, 175 million people in services sector, put together 524 million people would be educated and trained well to acquire necessary competencies to satisfy the labour market demands for achieving the inclusive green growth in the coming years.

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### APPENDIX –I

#### General Education of the Usually Employed Persons of 15 years and above -2011-12.

Level of General Education	Rural Areas (in %)			Urban Areas (in %)		
	Male	Female	All	Male	Female	All
1. Not Literate	27.9	56.3	42.1	11.2	27.9	19.6
2. Literate & Up to Primary	27.6	21.8	24.7	18.8	19.6	19.2
3. Middle	19.0	10.8	14.9	17.5	12.3	14.9
4. Secondary	12.9	5.9	9.4	16.5	9.1	12.8
5. Higher Secondary	6.6	2.6	4.6	10.9	7.1	9.0
6. Diploma/Certificate	1.1	0.5	0.8	2.9	2.3	2.5
7. & Above	5.0	2.0	3.5	22.2	21.7	22.0

Source: NSSO (2014) Report No. 554, Statement: 5.8